Analysis by electronic ...

approximations is applicable. The equation for 2n points of the contour can be replaced by a system of n linear equations. The free term of the equation contains the relative entry and exit angles as parameters. The solution can be plotted as a function of the entry angle. The method of solution is applicable to all practical geometry and flow parameters of blade cascades. This combination of advantages is not found in any other known integral equation. A numerical differentiation of the generalized potential is necessary at the end of the analysis but the errors due to differentiation do not affect the accuracy of preceding computations. The method of programming an electronic computer is discussed in detail. Profiles composed of circular arcs are chosen as a special example. A numerical example is given, dividing the profile contour into either 80 or 120 sections. The pitch/chord ratio was 0.646. The result is compared with a previously performed computation based on conformal mapping. Both are compared with experimental values showing close agreement. The special features of the program for profiles given by coordinate points are discussed. The machine time for one

Analysis by electronic ...

numerical analysis is about 6 minutes. There are 6 figures.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut
(Central Boiler and Turbine Institute)

Card 3/3

ZHUKOVSKIY, N.P.; PETROV, A.S.

Determining indices for the dressing of complex iron ores with the help of triangular diagrams. Obog. rud 7 no.3:29-35 '62. (MIRA 16:4)
(Iron ores—Testing) (Ore dressing)

ZHUKOVSKIY, M.I., doktor tekhn.nauk; SKNAR', N.A., kand.tekhn.nauk;
GUKASOVA, Ye.A., inzh.; MIKHAYLOVA, V.A., inzh.; NOVIKOVA, O.I., inzh.

Aerodynamic characteristics of blade profile lattices of the terminal stages of K-300-240 LMZ turbines. Energomashinostroenie 8 no.10:29-33 O '62. (MIRA 15:11)
(Steam turbines)

ZHUKOVSKIY, M.I., doktor tekhn.nauk; NOVIKOVA, O.I., inzh.; SKNAR', N.A., kand.tekhn.nauk

Desing method and experimental development of a group of guide blade profiles with increased values of the moments of resistance. Teploenergetika 9 no.10:52-55 O '62. (MIRA 15:9)

1. TSentral'nyy kotloturbinnyy institut.
(Turbines—Blades)

ZHUKOVSKIY, M. I., Doc Tech Sci -- (diss) "Aerodynamic methods of profiling the gratings of turbomachines." Leningrad, 1959. 18 pp; (Ministry of Higher Education USSR, Leningrad Polytechnic Inst im M. I. Kalinin); 175 copies; free; list of author's works at end of text (14 entries); (KL, 17-60, 149)

ZHUKOVSKIY

PHASE I BOOK EXPLOITATION SOV/4519

Gukasova, Yekaterina Aleksandrovna, Mikhail Isaakovich Zhukovskiy, Anatoliy Mikhaylovich Zavadovskiy, Larisa Mikhaylovna Zysina-Molozhen, Nikolay Akimovich Sknar', and Vsevolod Georgiyevich Tyryshkin

Aerodinamicheskoye sovershenstvovaniye lopatochnykh apparatov parovykh i gazovykh turbin (Aerodynamic Improvement of Blading in Steam and Gas Turbines) Moscow, Gosenergoizdat, 1960. 340 p. Errata slip inserted. 4,000 copies printed.

Eds.: V.S. Zhukovskiy, Doctor of Technical Sciences, Professor, and S.S. Kutateladze, Doctor of Technical Sciences, Professor; Tech. Ed.: O.S. Zhitnikova.

PURPOSE: This book is intended for engineers working in turbine-construction plants, design offices, and power systems, and may also be used by aspirants and students of advanced courses in power-machinery construction at schools of higher education.

COVERAGE: The book discusses aerodynamic methods for investigating, profiling, and improving the blading of steam and gas turbines. Methods for calculating the potential flow about airfoil cascades and for determining energy losses on the basis

Card 1/9

of the boundary-layer theory are presented. Also discussed are methods for experimental study of the flow about blades in stationary cascades (with consideration of three-dimensional phenomena) and on rotating models. A special chapter (IX) treats the results of aerodynamic profiling of new blade cascades. The results presented are based on work performed at TsKTI imeni I.I. Polzunov. The authors thank Professor L.G. Loytsyanskiy for his advice. There are 124 references: 106 Soviet, 10 English, and 8 German.

TABLE OF CONTENTS:

Aerodynamic Improvement of Blading (Cont.) SOV/4519

Card 4/9

Aerodynamic Improvement of Blading (Cont.) SOV/4519

Card 8/9

Aerodynamic Improvement of Blading (Cont.) SOV/4519

AVAILABLE: Library of Congress

Card 9/9

AC/pw/mas
12-29-60

ZHUKOVSKIY, M.I., kand.tekhn.nauk

Using hydroaerodynamic analogy for approximate investigation of supersonic flows in the cascades of blades. Teploenergetika 6 no.2:29-33 F '59. (MIRA 12:3)

1. TSentral'nyy kotloturbinnyy institut.
(Turbines) (Aerodynamics, Supersonic)

SOV/96-59-2-4/18

AUTHOR: Zhukovskiy, M.I., Candidate of Technical Sciences

TITLE: Use of the Water-Gas Analogy for the Approximate Investigation of Supersonic Flow over Blade Profiles (Primeneniye gidrogazoanalogii dlya priblizhennogo issledovaniya sverkhzvukovykh techeniy v reshetkakh profiley)

PERIODICAL: Teploenergetika, 1959, Nr 2, pp 29-33 (USSR)

ABSTRACT: There has been considerable interest in the analogy between the flow of gas and the motion of heavy incompressible liquid with a free surface in a channel. This is mainly because of the practical difficulties and expense of experimental investigation of super-sonic flow over turbine blades. The analogy is, of course, not accurate and the conditions necessary for high accuracy are stated and experimental conditions that have given particularly accurate results are briefly described. Expressions for the pressure, energy and velocity of the water and gas flows are then compared and are used to draw analogies between test results on water and on gas; for example it is shown that if the surfaces are geometrically similar in the two cases,

Card 1/3

Use of the Water-Gas Analogy for the Approximate Investigation of Supersonic Flow over Blade Profiles

the density of the gas is proportional to the depth of the water. The equations that apply below and above the critical speed of sound are given. The depths of water that can be used in the models depends on their size, thus in the installation at the Central Boiler Turbine Institute, the profile chords are about 300 to 350 mm and so the depth at the outlet from the blading can be about 20 mm. The formulae that must be used to translate test results into performance of real gases are then given. The method of determining outlet angles of flow in water model tests is explained. The experimental equipment is then described. The bottom of the equipment was made of polished glass with surface deviations of $\pm$ 0.2 mm. The co-ordinate trolley, 1,800 mm long, moved along rails and the carriage with the measuring tubes moved along the trolley. The instruments used to measure the depth are described and they are accurate to 0.1 to 0.2 mm, which is an error of about 1%. The blades were fixed down with wax and

Use of the Water-Gas Analogy for the Approximate Investigation of Supersonic Flow over Blade Profiles

the water flowed over them at controlled speeds. When conditions had settled down depth measurements were made. Tests were made with blading type TN-2 at Mach numbers up to 1.4 with a number of different pitches between blades and angles of attack. A comparison between the results obtained during tests in water and in air is made in Fig 4 and 5 and agreement is considered to be very satisfactory. There are 7 figures, 8 references of which 5 are Soviet, 1 English, 1 French and 1 German.

ASSOCIATION:Tsentral'nyy Kotloturbinnyy Institut (Central Boiler Turbine Institute)

ZHUKOVSKIY, M. I.

Opredelenie chisto tsirkuliatsionnogo obtekaniia reshetki profilei. (Prikladnaia matematika i mekhanika, 1949, v. 13, no. 4, p. 457-458, diagrs.)

Title tr.: Determination of a purely circulatory flow past an airfoil cascade.

Reviewed by L. Bers in Mathematical Reviews, 1950, v. 11, no. 3, p. 225.

QA801.F7 1949

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

ZHUKOVSKIY, M E

ZHUKOVSKIY,V.S., doktor tekhnicheskikh nauk, professor; ZHUKOVSKIY, M.I., kandidat tekhnicheskikh nauk; ZYSINA-MOLOZHEN, kandidat tekhnicheskikh nauk; MARKOV,N.M., kandidat tekhnicheskikh nauk; SKNAR',N.A., kandidat tekhnicheskikh nauk; TYRYSHKIN,V.G., kandidat tekhnicheskikh nauk

M.E.Deich's book "Technical gas dynamics." Reviewed by V.S.Zhukovskii and others. Teploenergetika 2 no.1:62-64 Ja '55. (MIRA 8:9)

(Turbines--Fluid dynamics) (Gas flow) (Deich, M.E.)

ZHUKOVSKIY, M.I., doktor tekhn. nauk; GUKASOVA, Ye.A., inzh.; DROZD, Ye.Ye., inzh.

Development and experimental study of the cascade of profiles of the root cross sections of the guide blade of the terminal stage of a large steam turbine. Energomashinostroenie 11 no.9:3-6 S '65. (MIRA 18:10)

PHASE I BOOK EXPLOITATION SOV/3983

Zhukovskiy, Mikhail Isaakovich

Raschet obtekaniya reshetok profiley turbomashin (Calculation of the Flow About Cascades of Blades in Turbines) Moscow, Mashgiz, 1960. 259 p. Errata slip inserted. 3,000 copies printed.

Reviewer: I. L. Povkh, Doctor of Technical Sciences, Professor; Ed.: N. M. Markov, Candidate of Technical Sciences; Ed. of Publishing House: V. P. Vasil'yeva; Tech. Ed.: A. I. Kontorovich; Managing Ed. for Literature on the Design and Operation of Machines (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This book is intended for engineers and scientific workers specializing in turbine aerodynamics. It may also be used by students of advanced courses in power engineering.

COVERAGE: The book presents the basic aspects of the theory of profile cascades and discusses methods for designing cascades for given conditions and for calculating the potential flow about a given cascade. In addition to the general theory,

Card 1/5

Calculation of the Flow About Cascades (Cont.) SOV/3983

AVAILABLE: Library of Congress

Card5/5

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8-17-60

ZHUKOVSKIY, Mikhail Isaakovich; POVKH, I.L., prof., doktor tekhn.nauk, retsenzent; MARKOV, N.M., kand.tekhn.nauk, red.; VASIL'YEVA, V.P., red.izd-va; KONTOROVICH, A.I., tekhn.red.

[Calculating the flow about cascades of profiles of turbomachines] Raschet obtekaniia reshetok profilei turbomashin. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 259 p. (MIRA 13:4)

(Turbomachines--Aerodynamics)

ZHUKOVSKIY, M.I., doktor tekhn. nauk

Method for designing subsonic and transonic lattices of the blade profiles of turbomachines. Energomashinostroenie 10 no.6:1-4 Je '64. (MIRA 17:9)

ZHUKOVSKIY, M. K.

"The Measuring Technique for Pressure and Vacuum" Moscow 1952

ZHUKOVSKIY, M.M.

White Russian S.S.R. Prom.koop. no.1:5-6 Ja '57. (MLRA 10:4)

1. Predsedatel' pravleniya Belpromsoveta.
(White Russia--Cooperative societies)

ZHUKOVSKIY, M.

A disease can be prevented. Okhr.truda i sots.strakh. no.9: 78-80 S '59. (MIRA 13:1)

1. Uchenyy sekretar' Presidiuma AMN SSSR.
(DYSENTERY)

LEVIN, M.S., kand.tekhn.nauk, ZHULIN, M.T., kand.tekhn.nauk

Increasing the calculated distance between poles for rural overhead steel aluminum lines. Nauch. trudy VIESKH 4:304-315 '59.
(MIRA 13:11)

(Electric lines--Overhead)

ZHUKOVSKII, N.

"Planning medical research in pediatry." Tr. from the Russian. p. 128. (ANALELE ROMANO-SOVIETICE. SERIA PEDIATRIE, Series a III-a, Vol. 6, no.6, Nov./Dec. 1953, Bucuresti, Rumania)

SO: Monthly List of East European Accessions, L. C., Vol. 3, No. 4, April 1954, Uncl.

N.E. ZHUKOVSKI, URANOSOV, A.

Thr father of Russian aviation. p.10.
(Aripile Patriei, Vol. 3, No.1. Jan 1957, Bucuresti, Rumania)

SO: Monthly List of East European Accessions (EEAL) Lc. Vol. 6, No. 8, Aug 1957. Uncl.

ZHUKOVSKIY, N. I.

29723

Myery po uluchshyeniyu organizatsii, povyshyeniyu proizvoditye1'nosti i uporyadochyeniyu oplaty truda v kolzhozakh. V sb: Michurinskuyu Nauku--v s.-kh. Proizvodstvo. Novosibirsk, 1949, S. 204-23.

So: Letopis' No. 40

ZHUKOVSKIY, N.I.

Types and dimensioanl series of devices and means of automation.
Standartizatsiia 25 no. 5:39-40 My '61. (MIRA 14:5)
(Automatic control) (Standards, Engineering)

ZOBACHEV, I.G.; UGRENINOV, N.G.; PROTOPOPOV, N.N.; ZHUKOVSKIY, N.I.; KHRAMOV, A.S.; RYABOV, I.S.; LAZOVNIKOV, M.A., tekhn. red.

[The city of Novosibirsk and Novosibirsk Province] Gorod Novosibirsk i Novosibirskaia oblast'. Novosibirsk, Novosibirskoe oblastnoe upravlenie "Poligrafizdat," 1948. 166 p. (MIRA 16:1)

(Novosibirsk) (Novosibirsk Province)

ZHUKOVSKIY, N.I.

Pneumatic-electric converters. Standartizatsiia 26 no.2:49-50 F '62. (MIRA 15:2)

(Pneumatic control)

ZHUKOVSKIY, N.I.

Manometers and vacuum gauges; wrist watches. Standartizatsiia 28 no.8:57-58 Ag '64. (MIRA 17:11)

ZHUKOVSKIY, N.I., inzhener.

Alarm clocks of the Erevan watch factory work badly. Standartizatsiia no.2:26-28 Mr-Ap '54. (MLRA 7:6)

1. Upravleniye po standartizatsii.
(Yerevan--Clockmaking and watchmaking)

ZHUKOVSKIY, M.I.

Pneumatic devices and equipment for automatic control. Standartizatsiia 24 no.8:38-39 Ag '60. (MIRA 13:9)
(Pneumatic control)

ZHUKOVSKIY, N.I.

Differential manometers. Standartizatsiia 24 no.9:49-50 S '60.
(MIRA 13:9)

(Manometer--Standards)

ZHUKOVSKIY, Nikolay Ivanovich; SINAGOV, V.N., redaktor; LIZINA, V.M., tekhnicheskiy redaktor

[Agriculture of Novosibirsk Province in the sixth five-year plan] Sel'skoe khoziaistvo Novosibirskoi oblasti v shestoi piatiletke. [Novosibirsk] Novosibirskoe kn-vo, 1956. 71 p. (MLRA 10:2)
(Novosibirsk Province--Agriculture)

Zhukovskiy, Nilolay Ivanovich

Novoye v sel'skom khozyaystve sibiri; po materialam novosiberskoy oblastl [New methods of agriculture in Siberia] Moskva, sel'khozgiz, 1958.

140 p. Tables.

28(3)

S/028/60/000/01/021/033
D041/D002

AUTHOR: Zhukovskiy, N.I.

TITLE: The Tomsk Manometer Plant is Improving the Quality of Instruments

PERIODICAL: Standartizatsiya, 1960, Nr 1, pp 52-53 (USSR)

ABSTRACT: This is a letter to the editors. For years, the Tomskiy manometrovyy zavod (Tomsk Manometer Plant) manufactured manometers, vacuum manometers, and vacuum gages of poor quality. After 3 to 5 months, most broke down. At the June Plenary Session of the TsK KPSS (CC of the CPSU), the plant was blamed for hampering the introduction of automation in production processes. By the end of October 1959, the Komitet standartov, mer i izmeritel'nykh priborov (Committee of Standards, Measures, and Measuring Instruments) inspected the plant and stated a considerable quality improvement in the instruments had been made. The plant has improved the manometer design, uses new

Card 1/3

S/028/60/000/01/021/033
D041/D002

The Tomsk Manometer Plant is Improving the Quality of Instruments

technical processes, has new furnaces with automatic temperature control (improving the quality of manometer springs), etc. The test laboratories are provided with new equipment for testing the instruments for transportability, vibration proofness, effect of pressure variations, strength of the springs, etc., as required by the "GOST 8265-59" standard. The plant needs a metallographic laboratory as well as mechanical laboratories for special springs, has yet to develop shakeproof manometers, standardize dimensions and start experimental work to find proper materials for instruments urgently needed in many industry branches where manometers have to be resistant to corrosive and viscous medium. The Tomskiy Sovnarkhoz can improve the work conditions by taking measures to speed up the construction of the new plant shops. A conference of the plant's staff

Card 2/3

S/028/60/000/01/021/033
D041/D002

The Tomsk Manometer Plant is Improving the Quality of Instruments

with the Sovnarkhoz and delegates from technical vuzes of Tomsk convened to discuss measures for further improvement of the quality of manometers.

Card 3/3

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S/028/60/000/01/021/033
D041/D002

The Tomsk Manometer Plant is Improving the Quality of Instruments

with the Sovnarkhoz and delegates from technical vuzes of Tomsk convened to discuss measures for further improvement of the quality of manometers.

Card 3/3

ZHUKOVSKIY, N.I.

Tractor and field brigades in Novosibirsk Province. Nauka i pered.op.v sel'khoz. 7 no.7:81-83 Jl '57. (MLRA 10:8)

1.Predsedatel' ispolkoma Novosibirskogo oblastnogo Soveta deputatov trudyashchikhsya.
(Novosibirsk Province--Collective farms)

ZHUKOVSKIY, Nikolay Ivanovich,; LAPIDUS, M.A., red.; ZUBRILINA, Z.P., tekhn. red.

[Innovations in Siberian agriculture; based on data from Novosibirsk Province] Novoe v sel'skom khoziaistve Sibiri; po materialam Novosibirskoi oblasti. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 140 p. (MIRA 11:11)

(Novosibirsk Province--Agriculture)

ZHUKOVSKIY, N.I., inzh.; KUZNETSOVA, M.I., otv. za vypusk; KASHIRIN, A.G., tekhn. red.

[Types and basic parameters of instruments and automatic controllers in the state standards of the U.S.S.R.] Tipy osnovnye parametry priborov i avtomaticheskikh reguliatorov v gosudarstvennykh standartakh SSSR. Izd. ofitsial'noe. Moskva, Gos.izd-vo standartov, 1961. 751 p. (MIRA 15:2)
(Automatic control—Standards) (Instruments—Standards)

ZHUKOVSKIY, N.I.

Converters, regulators and indicators. Standartizatsiia 26 no.4:41-43 Ap '62. (MIRA 15:3)
(Electric instruments--Standards) (Pneumatic control--Standards) (Manometer--Standards)

ZHUKOVSKIY, N.I.

Carry out the decision of the first all-Union conference on flexible sensitive elements. Izm.tekh. no.9:57-58 S '61. (MIRA 14:8)

(Transducers)

S/115/60/000/007/001/011
B016/B058

AUTHOR: Zhukovskiy, N. I.

TITLE: Improve the Quality of Pressure Meters !

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 7, pp. 8 - 12

TEXT: The author demands a considerable improvement of the quality of pressure meters, according to the tasks set by the 21st Congress of the Communist Party of the USSR (June 1959) and the Plenum of the Party Central Committee (July 1960). The poor quality of these instruments was ascertained in continuous controls by organs of the Komitet standartov, mer i izmeritel'nykh priborov (Committee on Standards, Measures, and Measuring Instruments). This applies particularly to measuring instruments for pressure, vacuum, and the consumption of liquids and gases. The faults of these instruments are due to poor manufacture of the sensitive elements. Lack of experimental and research studies in this field is a further cause. As an example, the author mentions that 50% of the manometers of the Tomskiy zavod (Tomsk Plant) become unfit for use after 4 to 8 months, although they should operate satisfactorily

Card 1/4

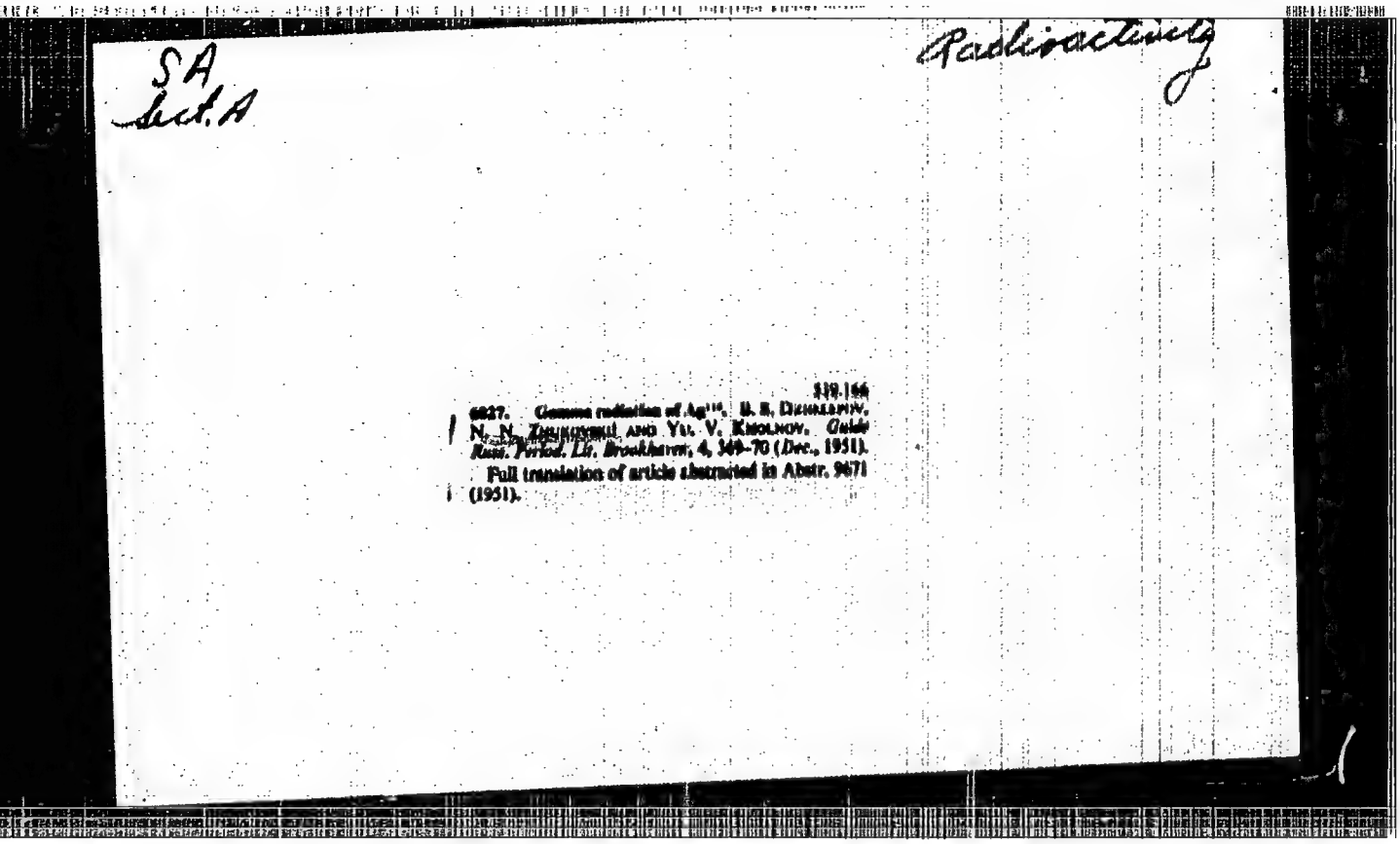
for 3 to 5 years. The working processes prescribed for the Tomsk Plant were badly infringed, as shown by some examples. Various working processes were also obsolete in many cases. All that has caused considerable damage to national economy (not less than 10 million rubles). The quality of manometers could be improved by measures taken by the Tomsk sovnarkhoz, the party organs, and the influence of the Committee on Standards, Measures, and Measuring Instruments. The author gives a detailed description of the improvements introduced. Moreover, the control- and test laboratories of the plant were equipped with new test instruments, enabling the plant to study and eliminate the faults of the instruments. The production of several new instruments according to ГОСТ 8625-59 (GOST 8625-59) is to start in 1960 and 1961. The measures for this purpose are enumerated. At the same time, the Committee checked the quality of instruments made by the Moskovskiy zavod "Manometr" (Moscow "Manometr" Plant), and it was established that 50% of the thermometers produced there exceeded the specifications laid down for accuracy by the double. 15% of the thermometers failed owing to insufficient air tightness. Further faults are enumerated. 20% of the sample manometers did not meet the requirements of ГОСТ 6521-53 (GOST 6521-53).

All the above faults were detected on manometers which had been accepted by the OTK. In the case of the differential manometers of the type ДМ-6 (DM-6) with secondary instruments ЭПИД (EPID), regulation stops functioning after short service life. The quality of the manometers could be somewhat improved in 1959 (9.4% rejects) as compared to 1957-58 (20-25% manometers returned to the assembly department). Nevertheless, the most important task, i.e. supply of high-quality control- and sample manometers, was not fulfilled by the plant. A laboratory for sensitive elements has not been organized so far. Inadequacies of manufacture in the following plants are described next: Kazanskiy zavod "Teplokontrol'" (Kazan' "Teplokontrol'" Plant), mediko-instrumental'nyy zavod "Krasnogvardeyets" ("Krasnogvardeyets" Plant for Medical Instruments), and Odesskiy zavod sanitarno-meditsinskogo oborudovaniya (Odessa Plant for Sanitary Medical Installations), where the manufacture of membrane instruments for measuring blood pressure was forbidden by order of the Ministerstvo zdravookhraneniya SSSR (Ministry of Health Protection, USSR); Khar'kovskiy zavod kontrol'no-izmeritel'nykh priborov (Khar'kov Plant for Measuring- and Control Instruments); Rizhskiy zavod "Avto-elektropribor" (Riga "Avtoelektropribor" Plant); zavod "Tizpribor"

Improve the Quality of Pressure Meters ! S/115/60/000/007/001/011
B016/B058

("Tizpribor" Plant). Recently, the NIITI has designed some apparatus for the testing of instruments to be manufactured.

Card 4/4

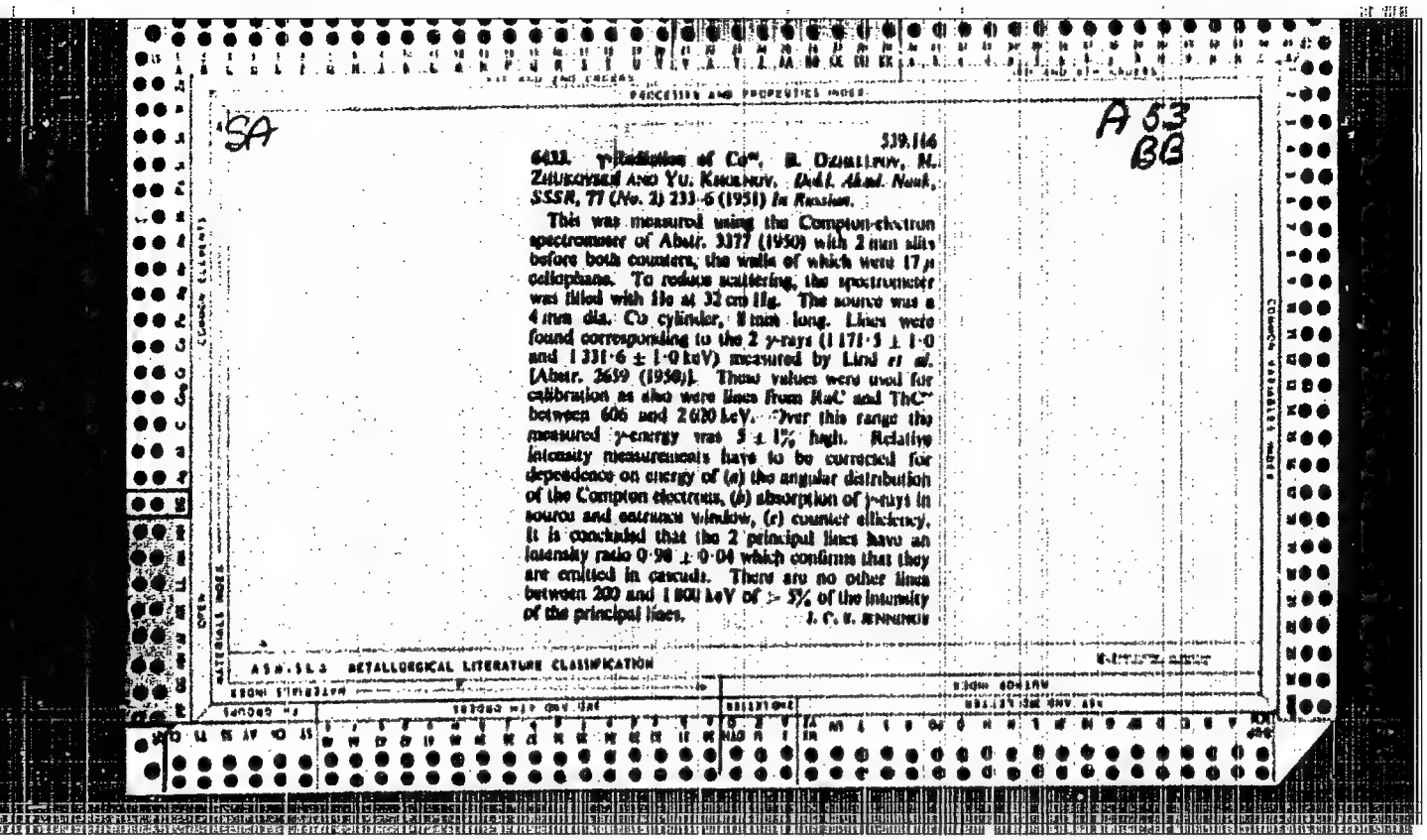


SA
Sect. A

Radioactivity

539.166

6827. Gamma radiation of Ag^{110}. B. S. Dzhelepov, N. N. Zhukovskii, and Yu. V. Kholnov. *Collect. Artic. Problems Phys. Lab. Brookhaven*, 4, 349-70 (Dec., 1951). Full translation of article abstracted in Abstr. 9671 (1951).



539.166

6433. γ-Radiation of Co^{60}. B. Dzhelepov, M. Zhukovskii and Yu. Knutsov. *Dokl. Akad. Nauk, SSSR*, 77 (No. 2) 233–6 (1951) *In Russian.*

This was measured using the Compton-electron spectrometer of Abstr. 3377 (1950) with 2 mm slits before both counters, the walls of which were 17 μ celliphane. To reduce scattering, the spectrometer was filled with He at 32 cm Hg. The source was a 4 mm dia. Co cylinder, 8 mm long. Lines were found corresponding to the 2 γ-rays (1 171·5 ± 1·0 and 1 331·6 ± 1·0 keV) measured by Lind *et al.* [Abstr. 2659 (1950)]. These values were used for calibration as also were lines from RaC and ThC'' between 606 and 2620 keV. Over this range the measured γ-energy was 3 ± 1% high. Relative intensity measurements have to be corrected for dependence on energy of (*a*) the angular distribution of the Compton electrons, (*b*) absorption of γ-rays in source and entrance window, (*c*) counter efficiency. It is concluded that the 2 principal lines have an intensity ratio 0·98 ± 0·04 which confirms that they are emitted in cascade. There are no other lines between 200 and 1 800 keV of > 5% of the intensity of the principal lines. J. C. B. Bennion

1ST AND 2ND GROUPS

PROCESSES AND PROPERTIES INDEX

941

γ RADIATION OF Ag^{110}. B. S. Dzhelepov, N. N. Zhukovskii, and Yu. V. Khol'nov. Doklady Akad. Nauk S.S.S.R. 77, No. 4, 597-8(1951) Apr. 1. (In Russian)

The γ-ray spectrum of Ag^{110} is shown. Four lines of 652 ± 7 (1.00), 886 ± 9 (1.03), 1388 (0.26), and 1484 (0.22) kev, where the figures in parentheses are relative intensities, were found. These are compared with the results of Siegbahn (Phys. Rev. 77, 233(1950); NSA 4-1577); a line at 930 kev given by this author was not resolved in the present experiment.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZHUKOVSKIY, N.

USSR/Physics - Gamma Radiation 11 Sep 52

"Gamma Radiation of Sb^{124}," K. Gromov, B. Dzhelepov, N. Zhukovskiy, A. Silant'yev, Yu. Khol'nov

"Dok Ak Nauk SSSR" Vol 86, No 2, pp 255-258

By means of the gamma spectrometer that employs the Compton electron, the authors investigate gamma radiation of subject antimony isotope, under conditions similar to those of the investigation of gamma spectra of Co^{61} and Ag^{110} in 1951 by the authors. The source of gamma rays was activated metallic antimony in the amt of 0.7 gram. Discuss exptl curve of current strength in an electromagnet versus number of coincidences per unit of time. Submitted by Acad P. I. Lukirskiy 2 Jul 52.

235T98

ZHUKOVSKIY, N.I.

Electric clocks. Standartizatsiia 28 no.2:49-50 F '64.
(MIRA 17:3)

ZHUKOVSKIY, N. I.

Make wider use of the calorimeters in national economy. Izm. tekh. no.11:36-37 N '60. (MIRA 13:11)

(Calorimeters)

ZHUKOVSKIY, N.I.

Improve the quality of pressure-measuring instruments.
Izm.tekh. no.7:8-12 Jl '60. (MIRA 13:7)
(Manometer) (Instrument manufacture)

ZHUKOVSKIY, N. N.

USSR/Nuclear Physics - Cu, Gamma Emission Jul/Aug 53

"Gamma Emission of Cu^{64}," B. S. Dzhelepov, N. N. Zhukovskiy, V. P. Prikhodtseva and Yu. V. Kholnov, Radio Inst, Acad Sci USSR

Iz Ak Nauk, Ser Fiz, Vol 17, No 4, pp 511-517

Studied in the gamma-spectrum of Cu^{64} the line $h\nu$ = 1.34 MeV, also observed by F. Kurie and M. Ter-Pogossian (Phys Rev 74,677 (1948)). Worked with gamma spectrometer, using recoil electrons. Obtained the same results as previously (DAN 86, 497 (1952)). Indebted to A. V. Kudryavtseva, L. N. Zyryanova and V. Chumin.

Rec 9 Jul 53.

272T51

ZHUKOVSKIY, N. N.

USSR/Nuclear Physics - Gamma-Spectrometer Jul/Aug 53

"Gamma Spectrometer With Improved Focusing," B. S. Dzhelepov, N. N. Zhukovskiy, A. S. Karamyan and S. A. Shestopalova, All-Union Sci-Res Inst of Metrology; Radium Inst, Acad Sci USSR

Iz Ak Nauk, Ser Fiz, Vol 17, No 4, pp 518-520

Attempt to improve resolution of gamma spectroscope described previously by Dzhelepov et al. (DAN 62, 613 (1948); 77, 233 (1951)). Because this spectroscope is based on recoil electrons, author named it "elotron." Indebted to V. Chumin and S. Rusinova. Rec 16 Jul 53.

272T52

ZHUKOVSKIY, N.N.

USSR/ Physics - Instruments

Card 1/ Pub. 43 - 5/5

Authors : Dzhelepov, B. S.; Zhukovskiy, N. N.; and Khol'nov, Yu. V.

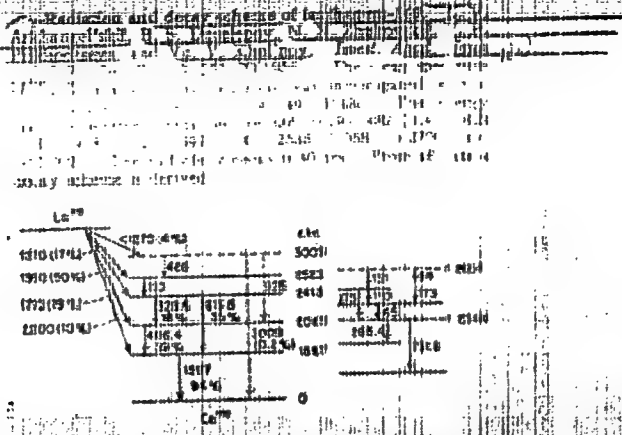
Title : Ritron - gamma-spectrometer utilizing output electrons

Periodical : Izv. AN SSSR. Ser. fiz. 18/5, 599 - 624, Sep - Oct 1954

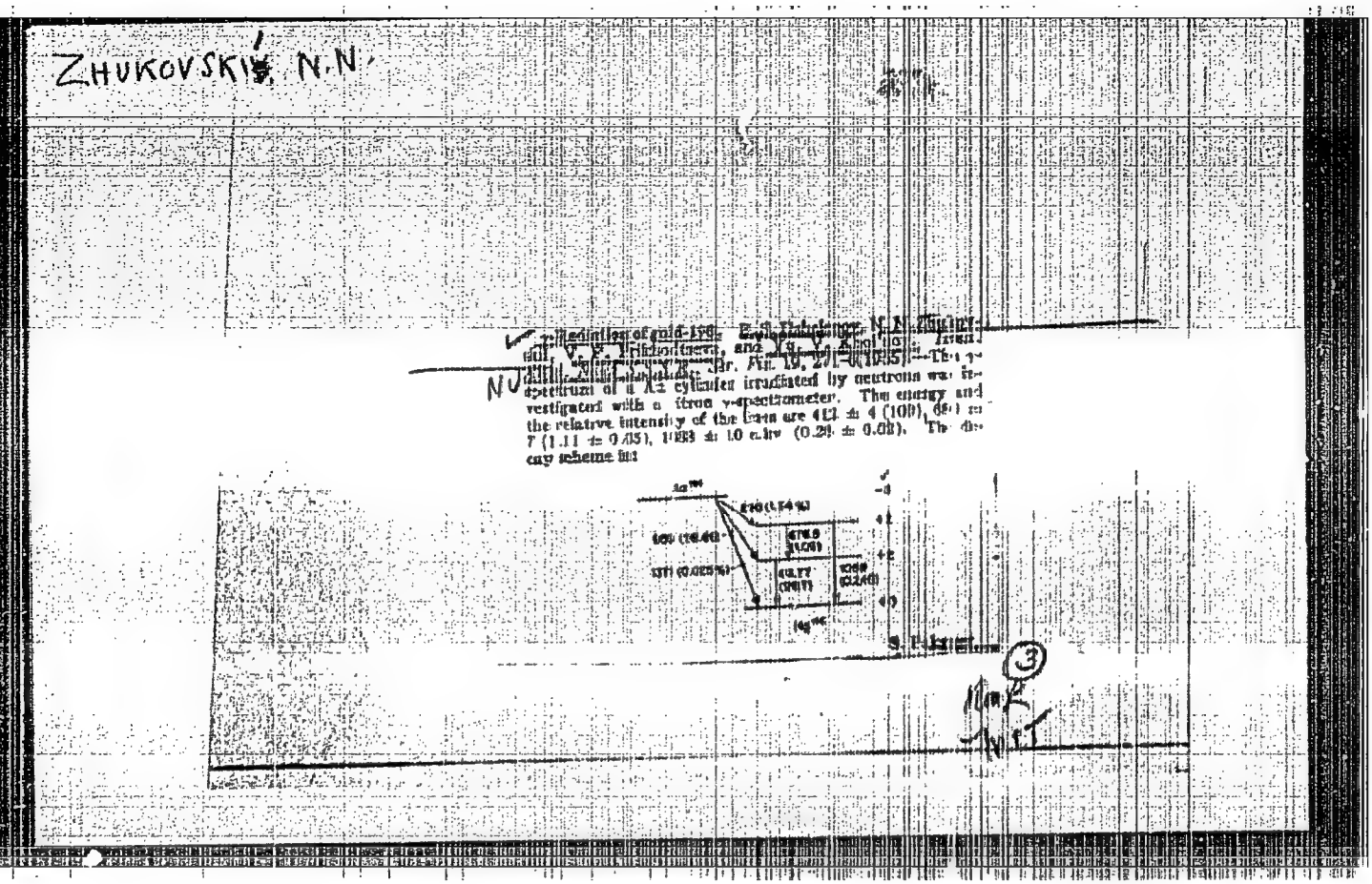
Abstract : The Ritron-magnetic gamma-spectrometer described in this report can be used for the study of gamma-spectra of radioactive substances with energies of from 300 - 4000 kev. With respect to resolving power the instrument was found to be inferior to the gamma-spectrometer with improved focus "Elotron", however, it has a certain advantage over the former, namely, it utilizes only uniform magnetic fields which makes it possible to calculate the form of the spectral line, spectral sensitivity, luminosity and other properties of the instrument. Some results obtained by the application of the Ritron-spectrometer are listed. Twenty-seven references: 15 USSR; 1 Canadian; 1 English; 1 Dutch and 9 USA (1947 - 1954). Tables; diagrams; drawings.

Institution: Academy of Sciences USSR, Radium Institute
Submitted: October 4, 1954

ZHUKOVSKIY, N.N.



ZHUKOVSKIY, N.N.



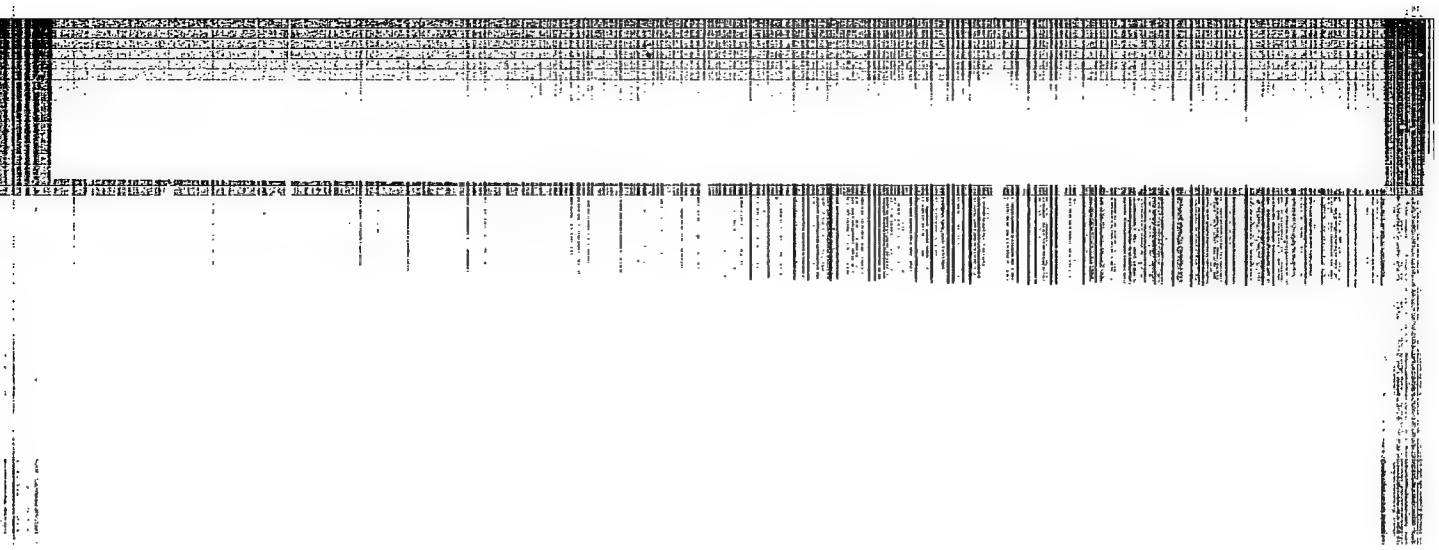
ZHUKOVSKIY, N.N.

469

GAMMA RADIATION FROM $Eu^{152,154}$. B. S. Dzhelepov, N. N. Zhukovskii and V. G. Nedovesov. (Khlopin Radium Inst.). Izvest. Akad. Nauk S.S.S.R. Ser. Fiz. 19, 280-9 (1955) May-June. (In Russian)

Gamma spectral lines obtained with a spectrometer with improved focusing are discussed. The conversion electrons were measured with cellophane targets of 17 and 50 μ. (R.V.J.)

(2)



APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R002065010013-3"

Zhukovskiy, N.N.

48-7-8/21

AUTHORS: Dzhelepov, B.S., Zhukovskiy, N.N., Nedovesov, V.G., Shchukin, G.Ye.

TITLE: The γ-Radiation of $Eu^{152,154}$ (γ-izlucheniye $Eu^{152,154}$)

PERIODICAL: Izvestiya Akad. Nauk SSSR, Ser. Fiz., 1957, Vol. 21, Nr 7, pp. 966 - 972 (USSR)

ABSTRACT: The γ-radiation of $Eu^{152, 154}$ was investigated by many scientists, but the complexity of the γ-spectrum and the great interest shown to the nucleus of Eu^{152}_{63} induced the authors to repeat the investigation of the γ-spectrum of the isotope mixture of $Eu^{152,154}$ by means of an improved "electron". The conditions of this work are described. The form of lines and the graduation according to energies are shown on figure 1 and the experimental curve of the spectral sensitivity of the "electron" is shown on figure 2. The experimental curve of the γ-spectrum of $Eu^{152,154}$ is represented on figure 3. According to the taking into account of the dependence of the form of lines on the energy (figure 1) the γ-spectrum, after drawing off the basis, is decomposed into individual components. Figures 4 to 7 record such a decomposition for the sections $H\rho$ = 1400 to 2250, 2800 to 4000, 4000 to 5000 and 5000 to 6300 Gs. cm. The summary curve

Card 1/2

Zhukovskiy, N.N.

48-7-9/21

AUTHORS: Dzhelepov, B.S., Zhukovskiy, N.N., Kondakov, Yu.G.

TITLE: The γ-Radiation of Ag^{110} (γ-izlucheniye Ag^{110})

PERIODICAL: Izvestiya Akad. Nauk SSSR, Ser. Fiz., 1957, Vol. 21, Nr 7, pp. 973 - 977 (USSR)

ABSTRACT: Figure 1 records the fundamental data on the decay scheme of Ag^{110} collected hitherto. This work determined the relative intensities of 12 γ-lines of Ag^{110}, whereby it was made possible to check the balance of the intensities on the individual levels as well as to determine the multifields of a number of transitions. The γ-radiation of Ag^{110} was investigated by means of a γ-spectrometer with improved focusing and an "elektron" which utilized the emitted electrons. A silver chip of 7,6 g weight activated by neutrons served as source. The measurements were carried out 3 months after the preparation of the source. The total view of the γ-spectrum of Ag^{110} is represented on figure 2. After elimination of the background the spectrum was decomposed into its components which is shown by figures 3 to 5 for the sections 2700 - 3500, 3400 - 4200 and 5200 - 6400 Gs. cm. 12 γ-lines were determined in the γ-spectrum. The resulting

Card 1/2

The γ-Radiation of Ag^{110}

data are given in table 1 where they are at the same time compared to the data obtained by other authors. Table 2 explains the obtained multifields of the γ-transitions. The relative intensity of the weak conversion lines is only inexactly known, therefore the determination of the multifields of the corresponding γ-transitions cannot be carried out with accuracy. There are 2 tables, 5 figures and 49 references, 11 of which are Slavic.

ASSOCIATION: Radium Institute im. V.G. Khlopin, AN USSR
(Radiyevyy institut imeni V.G. Khlopina Akademii nauk SSSR)

AVAILABLE: Library of Congress

Zhukovskiy, N. N.

48-12-9/15

AUTHORS: Dzhelepov, B. S., Zhukovskiy, N. N., Predovskiy, F. A.

TITLE: New Data on the γ-Spectrum of Sb^{124} (Novyye dannyye of γ-spektre Sb^{124})

PERIODICAL: Izvestiya AN SSSR, Seriya Fizicheskaya, 1957, Vol. 21, Nr 12, pp. 1614 - 1618 (USSR)

ABSTRACT: In order to give a precise determination of the earlier obtained (referenc 1) data on the relative intensity of the γ-lines of Sb^{124} the authors made new investigations of the γ-radiation of Sb^{124} in the elotron under new more favorable conditions (with regard to light intensity and dissolving power). At their disposal was metallic antimony, activated by neutrons, with a weight of $\sim$1,5 g and a total activity of $\sim$ 1,5 Cu. At the beginning of the measurements the age of the preparations was 40 days. Especially carefully investigated were 1.) The soft range of the γ-spectrum $H\varrho$ = 2500 + 3300 Gs.cm in which earlier with gas-filling (reference 1) the elotron could not su fficiently sharply separate the -lines $h\nu$ = 603 keV and 646 keV. 2.) The hard range $H\varrho$ = 4800 + 6300 Gs. cm in which the authors discovered new unknown (till then) γ-lines, where the intensity of those decreased with a period of $\sim$ 60 days.

Card 1/3

48-12-9/15

New Data on the γ-Spectrum of Sb^{124}

The curve of the spectral sensitivity of the apparatus under the new conditions (reference 2) permitted precisely to determine the values of the relative intensity of all γ-lines of Sb^{124}. Three γ-lines $h\nu$ = 603, 646 and 723 keV were, as earlier, determined in the observations. The precisely determined values of the relative intensity of the γ-lines are given in a table, as well as the multipolarity of some γ-transitions cabulated by the authors on the basis of own observations of the intensity of γ-lines and the data by Zolotavin and others (reference 3) on the relative intensities of the K-conversion-lines of Sb^{124}. The scheme of the decay Sb^{124} is given. It is based on the data collected until May 1956 (references 3 and 5) which were more precisely determined here. Regarding the multipolarity of the transitions it is shown that it may with certainty be assumed that the levels 603 and 2295 keV have the characteristics 2^+ and 3^-. The characteristic of the other levels is less certain, partially because of the possibility of a doublet-structure of the lines $h\nu$ = 646 and 723 keV. A comparison with other even-even nuclei shows that the two-quanta oscillation-excitation of Te^{124} in the range 1320 keV ($E_2^+/E_1^+ \approx 2{,}2$) must form a triplet $0^+ 2^+ 4^+$. Of these 3 possibilities the characteristic 2^+ must be ascribed to the level 1326 keV, as a) a transition 1326 → 0 and b) a transition 2295 → 1326 (line

Card 2/3

New Data on the γ-Spectrum of Sb^{124} 48-12-9/15

$h\nu$ =969 keV) of the type E 1 + M 2 is observed. The data on the lines 646, 1047 and 1450 keV give rise to the assumption that the level 1248 keV is of type 4^+. In the last chapter the balance of the intensities is investigated. It is shown that in case that the levels 1248 and 1326 keV possess the characteristics 4^+ and 2^+ and belong to a triplet, the probability of a β-decay of Sb^{124} (whose original state is of type 3^-) must almost be equal in these levels. There are 4 figures, 2 tables, and 6 references , 5 of which are Slavic.

ASSOCIATION: Radium Institute im. V. G. Khlopin AS USSR.
(Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR)

AVAILABLE: Library of Congress

Card 3/3

ZHUKOVSKIY, N.N. Cand Phys Math Sci ~~xxxx~~ -- (diss)

"Study of γ-spectra of Sb^{124}, $Eu^{152,154}$ and Ag^{110} by means of a γ-spectrometer with improved focusing, using recoil electrons ~~emission~~." Len 1958, 6 pp. (Acad Sci USSR. Radium Inst im V.G. Khlopin (Acad Sci) SSSR) 110 copies. Bibliography at end of text (15 titles). (KL, 39-58, 106)

γ = gamma

ZHUKOVSKIY, N. N. and DZHELEPOV, B. S.

"On the Gamma Spectra of Ag^{110}, Sb^{124} and $Eu^{152,154}$."

Nuclear Physics, Vol. 6, No. 5, p. 655, 1958, No. Holland Publ. Co.

Abst. The elotron, a recoil electron gamma spectrometer with improved focusing properties, was used to study the gamma radiation from Ag^{110}, Sb^{124} and $Eu^{152,154}$.

Radium Inst., im V. G. Khlopin, Acad. Sci. USSR, Leningrad.

DZHELEPOV, B. S. and ZHUKOVSKIY, N. N. (V. G. Khlopin Radium Institute, USSR Acad. Sci. Leningrad) SHESTOPALOVA, S. A. and UCHEVATKIN, I. F. (D. I. Mendeleyev Research Institute of Metrology, Leningrad.

"Gamma-Ray Spectrum of Radium in Equilibrium with its Decay Products," Nucelar Physics, v. 8,3,(1958) (North-Holland Publsihing Co., Amsterdan) pp. 250-264.

Abstract: Results are described of an investigation of the radium gamma-spectrum in equilibrium with its decay products, based on recoil electron measurements in the energy range 150-2530 keV. Fourth-four gamma-lines have been observed, and their relative intensities and the number of quanta per disintegration determined.

SOV/48-22-7-17/26

AUTHORS: Dzhelepov, B. S., Zhukovskiy, N. N., Uchevatkin, I. F., Shestopalova, S. A.

TITLE: New Data on the Relative Intensities of the γ-Lines of Ra in Equilibrium With Its Decay Products (Novyye dannyye ob otnositel'nykh intensivnostyakh γ-liniy Ra, nakhodyashchegosya v ravnovesii s produktami raspada)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 7, pp. 841-847 (USSR)

ABSTRACT: In order to examine and precise the data from reference 1 on the relative intensities in the spectrum of the γ-radiation of radium C this spectrum was again investigated in the "elotron" of the Radium Institute (Ref 2). 2 grams of radium in the compound $RaBr_2$ served as a source of γ-radiation. The shape of the source was identical with that one used in reference 1. The results are as follows: 1) Range from ~150 to 630 keV: This section of the spectrum up to the line at 609 keV was investigated for the first time by means of the recoil electrons. Apart from the well known lines of radium B at 241,9, 295,2 and 352,0 keV a pronounced excess

Card 1/4

New Data on the Relative Intensities of the γ-Lines of Ra in Equilibrium With Its Decay Products

of recoil electrons was observed near the line at 295,5 keV. The decomposition showed that the excess maximum is located at 285 keV. Between the intensive lines at 352 and 609 keV a number of less intensive γ-lines is found. It seems as if some of them correspond with not identified lines from reference 3, that is to say with Nr 68, 70, 77, 78 and 79. If these lines are considered to be K-conversion electrons of radium C, energy values of 386,8, 388,9, 466,7, 471,2 and 484,6 keV are obtained.

2) Range from 630 to 1810 keV: The line at 666 ± 7 keV is clearly visible, the lines at 703,2 and 721 ± 7 keV appear. The line at 652,4 keV was not found. Apart from the line at 768,7 keV three lines exist in the high energy range: 787,1, 806,3 and 837±8 keV. The following new γ-lines were found: 885 ± 10, 960 ± 5 and 1050 ± 10 keV. The line at 1541 ± 5 keV was clearly marked. A noticeable broadening of the line at 1764,4 keV and the existence of the lines at 1783,8 and 1790,7 keV (Ref 1) was not ascertained.

3) Range from 1780 to 2530 keV: Apart from the known

New Data on the Relative Intensities of the γ-Lines of Ra in Equilibrium With Its Decay Products

1848,5 keV-line an electron excess with a maximum near 1860 keV was discovered. This excess can be explained by the presence of the 1862,3 keV line (Ref 1). The existence of the 1900 keV line (Ref 1) was proved. An excess of recoil electrons exists in the range of 2016,7 and 2090 keV. Their intensity is smaller by about a factor of 3 than that given in reference 1.

For the purpose of determining the relative intensities the area of each component, reduced to equal Hρ intervals, was measured. Then corrections were added. The corrections took into account the efficiency of the counters for electrons of different energies, the self-absorption in the source, the wall absorption, and the spectral sensitivity of the apparatus. It was assumed that the intensity of the lines is proportional to these areas. The results show a good agreement. The intensity of the individual strong lines agree within limits of 7 - 10 %. The Graduate students F. A. Predovskiy (LPI) and N . A. Voinova (LGU) assisted in the measurements. There are 4 figures, 1 table, and 6 ref-

New Data on the Relative Intensities of the γ-Lines of Ra in Equilibrium With Its Decay Products

erences, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D. I. Mendeleyeva
(All Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev)
Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Radium Institute imeni V. G. Khlopin, AS USSR)

21(7)

SOV/48-23-2-3/20

AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N.

TITLE: Investigation of the γ-Spectrum of Se^{75} Within the Range 200 ÷ 900 kev (Issledovaniye γ-spektra Se^{75} v oblasti 200 ÷ 900keV)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 185-187 (USSR)

ABSTRACT: The investigations were carried out by means of the magnetic spectrometers "Rytron" and "Elotron" by use of recoil electrons. Two experimental curves are given in figure 1, which correspond to the γ-spectrum of Se^{75} and were obtained 1) by means of "Rytron" with cellophane target with a surface density of 6.15 mg/cm^2 and 2) by means of "Elotron" with polystyrene target with a surface density of 2.34 mg/cm^2. By analysis of the curves 5 components with the energies 207, 259, 278, 305 and 402 kev were separated from 2). The weaker range of the spectrum was investigated by means of "Rytron", and the 475 and 570 kev lines were found in addition (Fig 2). For a comparison, the energies and intensities of the γ-lines of Se^{75} obtained from data of other authors are listed in a table (Refs 1, 2, 3, 4, 5). Besides the authors of this

Card 1/2

SOV/48-23-2-3/20

Investigation of the γ-Spectrum of Se^{75} Within the Range 200 + 900 kev

paper, only Zolotavin (Ref 3) found the 475 kev line. The line 570 kev was found also by Van den Bold (Ref 2), Zolotavin (Ref 3) and Langevin-Joliot (Ref 4). There are 2 figures, 1 table, and 5 references, 1 of which is Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

24(5),24(7)
AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N. 307/48-23-7-8/31

TITLE: The γ-Emission of Ta^{182} in the Energy Range of 300-1,500 kev (γ-izlucheniye Ta^{182} v oblasti energiy 300-1500 kev)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 828-830 (USSR)

ABSTRACT: The introduction of the present paper mentions in short the results of many investigations of the rotational band of the ground state of W^{182}; then it is stated that the experiments described were carried out by an elotron with the purpose of determining the relative intensity of the γ-lines, at the same time looking for new lines in the range of energy indicated. The measured values are compiled in a diagram (Fig 1), and it is shown that there are practically no lines in the range hν = 300-850 kev, and that there are 7 lines of different intensities in the range hν = 850-1,350 kev. Finally, some known lines of low intensity in this range are mentioned. There are 2 figures, 1 table, and 5 references, 2 of which are Soviet.

Card 1/2

The γ-Emission of Ta^{182} in the Energy Range of 300-1,500 kev

SOV/48-23-7-8/31

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

S/048/60/024/03/07/019
B006/B014

AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N.

TITLE: Investigation of the Gamma Radiation of Ag^{110*} in the Energy Range 0.2 ÷ 2.0 Mev

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 3, pp. 291 - 299

TEXT: The article under review was read at the Tenth All-Union Conference on Nuclear Spectroscopy (Moscow, January 19 - 27, 1960). In recent years data on the γ-emission of Ag^{110*} appeared in various papers, inter alia by L. Gustova et al. (Ref. 3) and by the authors of this article (energy range 650 - 1,600 kev). The energies of the γ-lines detected by the various authors in the various energy ranges under consideration are given in the introduction. The authors analyzed again the γ-spectrum of Ag^{110*} in the range 0.2 - 2.0 Mev by means of an elotron. A neutron-activated sample of approximately 11 g served as source. The initial activity of the source was about 0.9 curies. Experimental results are

Card 1/3

Investigation of the Gamma Radiation of Ag^{110m} in the Energy Range 0.2 ÷ 2.0 Mev

S/048/60/024/03/07/019
B006/B014

compiled in diagrams and tables. The 656-kev lines were used as reference lines. In the range 440 - 1,600 kev 14 lines could be recorded separately. Their intensity exceeded 1 per cent of that of the 656-kev line. An analysis of the experimental curves made on the elotron showed that the ranges 300 - 430 kev and 450 - 600 kev contained no lines with intensities greater than 1 per cent and/or 0.8 per cent of that of the 656-kev line. There was no sign of existence of a 723-kev line in the γ-spectrum of Ag^{110m} (as described by Cork et al.), provided its intensity be greater than 1 per cent of that of the 656-kev line. No γ-lines with intensities exceeding 0.3 per cent were found in the range 950 - 1,350 kev. Next, a great number of further details are discussed, such as intensities (Table 1), lifetimes, and multipole types of the various transitions. Further, the results of numerous papers dealing with decay schemes of isobaric nuclei with A = 110 are discussed (Fig. 2). The following is dealt with in detail: the quantum characteristics of the excited levels of Cd^{110} and the pertinent intensity equilibrium, the isomeric transitions in Ag^{110} and In^{110} (Table 2 lists the theoretical K/L values and $T_{1/2}$ of the 120-kev transition in In^{110} for various multipole types). Finally,

Card 2/3

V/B

Investigation of the Gamma Radiation of Ag^{110m} in the Energy Range 0.2 ÷ 2.0 Mev

S/048/60/024/03/07/019
B006/B014

the actual possibilities of β^+-decay and of the capture of orbital electrons in Ag^{110m} and Ag^{110} are discussed. Mention is made of N. Anton'yeva. In conclusion, the authors thank V. P. Prikhodtseva and Yu. V. Khol'nov for putting the rytron at their disposal. There are 2 figures, 2 tables, and 34 references, 7 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

V/B

Card 3/3

L 28963-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019087 SOURCE CODE: UR/0367/66/003/001/0003/0007

AUTHOR: Volnova, N.A.; Dzhelepov, B.S.; Zhukovskiy, N.N.; Kalinichev, Yu.V.; Maloyan, A.K.; Sergeyev, A.G.

ORG: Physicotechnical Institute im. A.F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR); Radium Institute, AN SSSR (Radiyevyy institut AN SSSR)

TITLE: Gamma radiation of Eu sup 152 in the 1380-1900 keV energy range

SOURCE: Yadernaya fizika, v. 3, no. 1, 1966, 3-7

TOPIC TAGS: gamma radiation, europium, gamma spectrometer, radioisotope

ABSTRACT: The γ-spectrum of Eu^{152} in the 1380-1900 keV energy range was investigated on the magnetic Compton γ-spectrometer elotron of the Physics-Engineering Institute of the USSR Academy of Sciences. New γ-lines with energies of 1510, 1577, 1680, and 1756 keV were found and their relative intensities determined. The energy of the 1411.9 ± 0.7 keV γ-line in Eu^{152} was determined more precisely and this line was separated from the 1407.6 keV γ-line in Eu^{152}. The 1680 keV 1^+ level in Sm^{152} and the 1756 keV 1^- level in Gd^{152} are studied. The decay scheme is discussed. Based on author's English abstract. Orig. art. has: 1 table and 3 figures. [JPRS]

SUB CODE: 18, 20 / SUBM DATE: 17Apr65 / ORIG REF: 002 / OTH REF: 005

Card 1/1 BLG

L 31298-66 EWT(m)

ACC NR: AP6022571 SOURCE CODE: UR/0048/66/030/003/0394/0402

AUTHOR: Dzhelepov, B. S.; Dmitriyev, A. O.; Zhukovskiy, N. N.; Kalyamin, A. G.

ORG: none

TITLE: Gamma radiation of Eu sup 156 in the 600 to 2400 kev range

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 3, 1966, 394-402

TOPIC TAGS: gamma radiation, gamma spectrum, europium, spectrometer, neutron irradiation, electron spectrum, radioactive decay scheme, gamma transition

ABSTRACT: In continuation of previous work the gamma spectrum of Eu^{156} was studied in the energy range of 600 to 2400 kev with a magnetic spectrometer. An enriched sample of Eu^{155} was irradiated with thermal neutrons (2×10^{14} cm^{-2}/sec) for 1000 hours, then aged 200 days. The Eu^{156} spectrum was obtained by subtracting the spectrum of $Eu^{152+154}$. The recoil electron spectrum is plotted for the entire range of energies and the most probable decay scheme is shown in a figure. Results of measured relative gamma-ray intensities are compared with those of other authors. Methods used are shown to be more accurate than those of other authors. Four new gamma transitions are introduced: hv = 907, 943, 1028, and 1686 kev. The schemes for these transitions are discussed.

The authors thank V. F. Rodionov and T. I. Sidorova for assistance in making the measurements. Orig. art. has: 2 figures and 2 tables. [JPRS]

SUB CODE: 18,20/SUBM DATE: none/ ORIG REF: 004/ OTH REF: 007

Card 1/1 CC

0915 0685

L 31408-66 EWT(m).

ACC NR: AP6022572 SOURCE CODE: UR/0048/66/030/003/0403/0406

AUTHOR: Dzhelepov, B. S.; Zhukovskiy, N. N.; Maloyan, A. G.; Prikhodtseva, V. P. 41 B

ORG: none 19

TITLE: Gamma spectrum of La sup 140 in the energy range of 300 to 1610 kev

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 3, 1966, 403-406

TOPIC TAGS: gamma spectrum, lanthanum, lanthanum oxide, neutron irradiation, thermal neutron, spectral line, radioactive decay, gamma transition

ABSTRACT: New studies were carried out on the gamma spectrum of La^{140} with an elotron having a resolution of $\Delta H\rho/H\rho = 1.2\%$ (at 1 Mev) in the range of 300 to 1610 kev. The gamma ray source was a lanthanum oxide target irradiated with thermal neutrons. Curves plotted of the overall spectrum and of the region of interest are shown. New weak transitions are clearly observed at 434 and 726 kev. The 635 kev line observed by other authors was not seen and is assumed to have an intensity of less than 1.0% per decay. Detailed studies are not made in the range of 970 to 1500 kev, so the new weak transitions previously reported in the literature at 1088, 1120, 1415, and 1680 kev are not confirmed but are assumed to have an intensity of less than 0.3% per decay.

Data obtained for the various transitions are tabulated and compared with the results of other authors. The conversion line at 1595.5 ± 1.5 kev is found to be singlet rather than a doublet as previously supposed. The authors thank E. P. Grigor'yev and M. P. Avotina for allowing them to use the π/2 spectrometer, L. N. Moskvin for preparing the sources, and T. I. Sidorova for help in measuring the electron. Orig. art. has: 4 figures and 1 table. [JPRS]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 004

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L 44037-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6032229 SOURCE CODE: UR/0367/66/003/005/0785/0793

AUTHOR: Dzhelepov, B. S.; Zhukovskiy, N. N.; Maloyan, A. G.

ORG: none

TITLE: Gamma-radiation of 12.3-year Eu sup 152

SOURCE: Yadernaya fizika, v. 3, no. 5, 1966, 785-793

TOPIC TAGS: gamma spectrum, radioactive decay, europium

ABSTRACT: The γ-spectrum of 12.3-year Eu^{152} is investigated with the help of photoritron and elotron magnetic spectrometers. 29 γ-lines were observed and their energy and relative intensities were measured with an accuracy higher than in previous papers. The 296, 360, 674, 720, 840, 1253, and 1454 keV lines were found for the first time. The α_k-values for 15 γ-transitions were determined more precisely. The decay scheme of Eu^{152} is given: the γ-transition intensities and lg ft values are obtained from the results of the present investigation. The authors thank Yu. V. Khol'nov for making possible the research on the γ-spectrum Eu^{152} on the photoritron magnetic spectrometer. Further thanks go to A. G. Dmitriyev, E. A. Arutyunyan and T. I. Sidorovaya for assistance with the measurements and processing of the experimental data. Orig. art. has: 4 figures, 3 formulas and 3 tables. [Based on authors' Eng. abst.] [JPRS: 36,712]

SUB CODE: 20, 18 / SUBM DATE: 13May65 / ORIG REF: 008 / OTH REF: 008

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0919 1254

L 00[illegible]-67 EWT(m)/EWA(h)/EWT IJP(c) JD/JG

ACC NR: AP7002794 SOURCE CODE: UR/0048/66/030/008/1265/1276

AUTHOR: Dzhelepov, B. S.; Dmitriyev, A. G.; Zhukovskiy, N. N.; Maloyan, A. G. 27

ORG: none

TITLE: Gamma spectrum of Eu sup 154

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 8, 1966, 1265-1276

TOPIC TAGS: gamma radiation, gamma transition, gamma spectrum

ABSTRACT: γ-radiation of Eu^{154} was investigated with the aid of a magnetic spectrometer. All the isolated γ-lines of Eu^{154} and their relative intensities were tabulated. Altogether, 32 γ-lines were detected in the region $h\nu > 200$ kev, of which only 14 lines had been previously known. The conversion coefficients for transitions to Gd^{154} can be determined by utilizing the data on the relative intensities of the K-conversion and γ-lines accompanying the decay of Eu^{154} on condition that the conversion coefficient of at least one transition is known. The scheme of Gd^{154} levels is complemented with two new levels with the energies 1617 and 1663 kev. The first level is deexcited by three transitions $h\nu$ = 1493, 1248, and 616 kev to the levels 2^+, 2^+, and 4^+ with the energies 123, 371, and 998 kev respectively. The level with 1663-kev energy makes it possible to place the observed -transitions having energies of 1539, 847, and 616 kev: they are arrayed between this level and the levels 2^+, 2^+, and 4^+ with the energies of 123, 816, and 1049 kev

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ACC NR: AP7002794

respectively. The balance of intensities of γ-transitions with respect to Gd^{154} levels was utilized to determine the percentile ratio of the β-components of Eu^{154} and to calculate the values of log ft, which were found to be anomalously high. Orig. art. has: 7 figures 2 formulas and 3 tables. [JPRS: 39,040]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 014

Card 2/2

DZHELEPOV, B.S.; ZHUKOVSKIY, N.N.; MALOYAN, A.G.

Gamma spectrum of Eu^{152*} having a half-life of 9.2 hours.
IAd. fiz. 1 no.6:941-947 Je '65. (MIRA 18:6)